

## SEQUENCE LISTING

&lt;110&gt; Vertino, Paula M.

&lt;120&gt; TMS1 Compositions and Methods of Use

&lt;130&gt; E0355/7003/ERG/MAT

&lt;150&gt; US 60/159,975

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&lt;160&gt; 27

&lt;170&gt; FastSEQ for Windows Version 3.0

&lt;210&gt; 1

&lt;211&gt; 2821

&lt;212&gt; DNA

&lt;213&gt; Homo Sapiens

&lt;400&gt; 1

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cggggccgagc ccaccaacccc aagcaagatg cgggaagctct tcagttttcac accagcctgg 2280
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aaaagaggca tgtacaaaag ggcgcaaaact ggtgggcagc tctgtccaag ccatttagaa 2760
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<210> 2  
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 <212> DNA  
 <213> Homo Sapiens

<220>  
 <221> CDS  
 <222> (75)...(662)

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gggatcctgg agcc atg ggg cgc gcg cgc gac gcc atc ctg gat gcg ctg 110
          Met Gly Arg Ala Arg Asp Ala Ile Leu Asp Ala Leu
                1                5                10

gag aac ctg acc gcc gag gag ctc aag aag ttc aag ctg aag ctg ctg 158
Glu Asn Leu Thr Ala Glu Glu Leu Lys Lys Phe Lys Leu Lys Leu Leu
          15                20                25

tcg gtg ccg ctg cgc gag ggc tac ggg cgc atc ccg cgg ggc gcg ctg 206
Ser Val Pro Leu Arg Glu Gly Tyr Gly Arg Ile Pro Arg Gly Ala Leu
          30                35                40

ctg tcc atg gac gcc ttg gac ctc acc gac aag ctg gtc agc ttc tac 254
Leu Ser Met Asp Ala Leu Asp Leu Thr Asp Lys Leu Val Ser Phe Tyr
          45                50                55                60

ctg gag acc tac ggc gcc gag ctc acc gct aac gtg ctg cgc gac atg 302
Leu Glu Thr Tyr Gly Ala Glu Leu Thr Ala Asn Val Leu Arg Asp Met
          65                70                75

ggc ctg cag gag atg gcc ggg cag ctg cag gcg gcc acg cac cag ggc 350
Gly Leu Gln Glu Met Ala Gly Gln Leu Gln Ala Ala Thr His Gln Gly
          80                85                90

tct gga gcc gcg cca gct ggg atc cag gcc cct cct cag tcg gca gcc 398
Ser Gly Ala Ala Pro Ala Gly Ile Gln Ala Pro Pro Gln Ser Ala Ala
          95                100                105

aag cca ggc ctg cac ttt ata gac cag cac cgg gct gcg ctt atc gcg 446
Lys Pro Gly Leu His Phe Ile Asp Gln His Arg Ala Ala Leu Ile Ala
          110                115                120

agg gtc aca aac gtt gag tgg ctg ctg gat gct ctg tac ggg aag gtc 494
Arg Val Thr Asn Val Glu Trp Leu Leu Asp Ala Leu Tyr Gly Lys Val
          125                130                135                140

ctg acg gat gag cag tac cag gca gtg cgg gcc gag ccc acc aac cca 542

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Leu Thr Asp Glu Gln Tyr Gln Ala Val Arg Ala Glu Pro Thr Asn Pro	
145 150 155	
agc aag atg cgg aag ctc ttc agt ttc aca cca gcc tgg aac tgg acc	590
Ser Lys Met Arg Lys Leu Phe Ser Phe Thr Pro Ala Trp Asn Trp Thr	
160 165 170	
tgc aag gac ttg ctc ctc cag gcc cta agg gag tcc cag tcc tac ctg	638
Cys Lys Asp Leu Leu Leu Gln Ala Leu Arg Glu Ser Gln Ser Tyr Leu	
175 180 185	
gtg gag gac ctg gag cgg agc tga ggctccttcc cagcaacact ccggtcagcc	692
Val Glu Asp Leu Glu Arg Ser *	
190 195	
cctggcaatc ccaccaaatc atcctgaatc tgatcttttt atacacaata tacgaaaagc	752
cagcttgaaa aaaaaaaaa	770

<210> 3  
 <211> 195  
 <212> PRT  
 <213> Homo Sapiens

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Arg Glu Gly Tyr Gly Arg Ile Pro Arg Gly Ala Leu Ser Met Asp	
35 40 45	
Ala Leu Asp Leu Thr Asp Lys Leu Val Ser Phe Tyr Leu Glu Thr Tyr	
50 55 60	
Gly Ala Glu Leu Thr Ala Asn Val Leu Arg Asp Met Gly Leu Gln Glu	
65 70 75 80	
Met Ala Gly Gln Leu Gln Ala Ala Thr His Gln Gly Ser Gly Ala Ala	
85 90 95	
Pro Ala Gly Ile Gln Ala Pro Pro Gln Ser Ala Ala Lys Pro Gly Leu	
100 105 110	
His Phe Ile Asp Gln His Arg Ala Ala Leu Ile Ala Arg Val Thr Asn	
115 120 125	
Val Glu Trp Leu Leu Asp Ala Leu Tyr Gly Lys Val Leu Thr Asp Glu	
130 135 140	
Gln Tyr Gln Ala Val Arg Ala Glu Pro Thr Asn Pro Ser Lys Met Arg	
145 150 155 160	
Lys Leu Phe Ser Phe Thr Pro Ala Trp Asn Trp Thr Cys Lys Asp Leu	
165 170 175	
Leu Leu Gln Ala Leu Arg Glu Ser Gln Ser Tyr Leu Val Glu Asp Leu	
180 185 190	
Glu Arg Ser	
195	

<210> 4  
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 <212> DNA  
 <213> Homo Sapiens

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aaggcgggga gtccaggttc cgccccggag ccgacttcct cctggtcggc ggctgcagcg	120
gggtgagcgg cggcagcggc cggggatcct ggagccatgg ggcgcgcgcg cgacgccatc	180

ctggatgcgc	tggagaacct	gaccgcccag	gagctcaaga	agttcaagct	gaagctgctg	240
tcggtgccc	tgcgcgaggg	ctacgggccc	atcccgcggg	gcgcgctgct	gtccatggac	300
gccttgacc	tcaccgacaa	gctgggtcagc	ttctacctgg	agacctacgg	cgccgagctc	360
accgctaacg	tgctgcgcga	catggggcctg	caggagatgg	ccgggcagct	gcaggcggcc	420
acgcaccagg	gtgagccgcc	cccgttcccc	tccaccccgt	ctttcccctc	caccacaccc	480
agcgcttacc	ccgcgggctc	ttccgctttc	tggttctcct	acccctaaac	aaagctgctc	540
taccgaaag	gaggctcccc	acgcttgccc	taccgaccaa	cgggaccccg	gccccacggc	600
gggaagggaa	gggaagggga	tcactt				626

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<211> 339  
<212> DNA  
<213> Homo Sapiens

<220>  
<221> CDS  
<222> (67)...(339)

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	Met	Gly	Arg	Ala	Arg	Asp	Ala	Ile	Leu	Asp	Ala	Leu	Glu	Asn		
	1				5									10		
ctg	acc	gcc	gag	gag	ctc	aag	aag	ttc	aag	ctg	aag	ctg	ctg	tcg	gtg	156
Leu	Thr	Ala	Glu	Glu	Leu	Lys	Lys	Phe	Lys	Leu	Lys	Leu	Leu	Ser	Val	
	15				20					25					30	
ccg	ctg	cgc	gag	ggc	tac	ggg	cgc	atc	ccg	cgg	ggc	gcg	ctg	ctg	tcc	204
Pro	Leu	Arg	Glu	Gly	Tyr	Gly	Arg	Ile	Pro	Arg	Gly	Ala	Leu	Leu	Ser	
				35					40					45		
atg	gac	gcc	ttg	gac	ctc	acc	gac	aag	ctg	gtc	agc	ttc	tac	ctg	gag	252
Met	Asp	Ala	Leu	Asp	Leu	Thr	Asp	Lys	Leu	Val	Ser	Phe	Tyr	Leu	Glu	
			50					55					60			
acc	tac	ggc	gcc	gag	ctc	acc	gct	aac	gtg	ctg	cgc	gac	atg	ggc	ctg	300
Thr	Tyr	Gly	Ala	Glu	Leu	Thr	Ala	Asn	Val	Leu	Arg	Asp	Met	Gly	Leu	
		65					70					75				
cag	gag	atg	gcc	ggg	cag	ctg	cag	gcg	gcc	acg	cac	cag	g			340
Gln	Glu	Met	Ala	Gly	Gln	Leu	Gln	Ala	Ala	Thr	His	Gln				
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<210> 6  
<211> 91  
<212> PRT  
<213> Homo Sapiens

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Ala	Glu	Glu	Leu	Lys	Lys	Phe	Lys	Leu	Lys	Leu	Leu	Ser	Val	Pro	Leu
			20					25					30		
Arg	Glu	Gly	Tyr	Gly	Arg	Ile	Pro	Arg	Gly	Ala	Leu	Leu	Ser	Met	Asp
		35				40						45			
Ala	Leu	Asp	Leu	Thr	Asp	Lys	Leu	Val	Ser	Phe	Tyr	Leu	Glu	Thr	Tyr
	50				55					60					
Gly	Ala	Glu	Leu	Thr	Ala	Asn	Val	Leu	Arg	Asp	Met	Gly	Leu	Gln	Glu

atg cgg aag ctc ttc agt ttc aca cca gcc tgg aac tgg acc tgc aag 191  
Met Arg Lys Leu Phe Ser Phe Thr Pro Ala Trp Asn Trp Thr Cys Lys  
50 55 60

gac ttg ctc ctc cag gcc cta agg gag tcc cag tcc tac ctg gtg gag 239  
Asp Leu Leu Leu Gln Ala Leu Arg Glu Ser Gln Ser Tyr Leu Val Glu  
65 70 75

gac ctg gag cgg agc tga g gctccttccc agcaacactc cggtcagccc 288  
Asp Leu Glu Arg Ser \*  
80

ctggcaatcc caccaaata tcttgaatct gatcttttta tacacaatat acgaaaagcc 348  
agcttgaa 356

<210> 10  
<211> 84  
<212> PRT  
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Asn Val Glu Trp Leu Leu Asp Ala Leu Tyr Gly Lys Val Leu Thr Asp  
20 25 30  
Glu Gln Tyr Gln Ala Val Arg Ala Glu Pro Thr Asn Pro Ser Lys Met  
35 40 45  
Arg Lys Leu Phe Ser Phe Thr Pro Ala Trp Asn Trp Thr Cys Lys Asp  
50 55 60  
Leu Leu Leu Gln Ala Leu Arg Glu Ser Gln Ser Tyr Leu Val Glu Asp  
65 70 75 80  
Leu Glu Arg Ser

<210> 11  
<211> 18  
<212> DNA  
<213> Homo Sapiens

<400> 11  
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<210> 12  
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<212> DNA  
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<400> 12  
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<210> 13  
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<400> 13  
tgggcctgca ggagatg 17

<210> 14  
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<212> DNA  
<213> Homo Sapiens

<400> 14

ccttcctggg catggagtcc tg 22

<210> 15  
<211> 21  
<212> DNA  
<213> Homo Sapiens

<400> 15  
ggagcaatga tcttgatcct c 21

<210> 16  
<211> 21  
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<400> 16  
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<210> 17  
<211> 25  
<212> DNA  
<213> Artificial Sequence

<220>  
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<400> 17  
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<210> 18  
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<212> DNA  
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<400> 18  
ttgtagcggg gtgagcggc 19

<210> 19  
<211> 22  
<212> DNA  
<213> Homo Sapiens

<400> 19  
aacgtccata aacaacaacg cg 22

<210> 20  
<211> 803  
<212> DNA  
<213> Mus Musculus

<220>  
<221> CDS  
<222> (162)...(743)

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agcaagagta aaaggtgacc gcggctgccc accccagagc c atg ggg cgg gca cga 176  
Met Gly Arg Ala Arg  
1 5

gat gcc atc ctg gac gct ctt gaa aac ttg tca ggg gat gaa ctc aaa 224  
Asp Ala Ile Leu Asp Ala Leu Glu Asn Leu Ser Gly Asp Glu Leu Lys  
10 15 20

aag ttc aag atg aag ctg ctg aca gtg caa ctg cga gaa ggc tat ggg 272  
Lys Phe Lys Met Lys Leu Leu Thr Val Gln Leu Arg Glu Gly Tyr Gly  
25 30 35

cgc atc cca cgc ggg gcc ctg ctg cag atg gac gcc ata gat ctc act 320  
Arg Ile Pro Arg Gly Ala Leu Leu Gln Met Asp Ala Ile Asp Leu Thr  
40 45 50

gac aaa ctt gtc agc tac tat ctg gag tcg tat ggc ttg gag ctc aca 368  
Asp Lys Leu Val Ser Tyr Tyr Leu Glu Ser Tyr Gly Leu Glu Leu Thr  
55 60 65

atg act gtg ctt aga gac atg ggc tta cag gag ctg gct gag cag ctg 416  
Met Thr Val Leu Arg Asp Met Gly Leu Gln Glu Leu Ala Glu Gln Leu  
70 75 80 85

caa acg act aaa gaa gag tct gga gct gtg gca gct gca gcc agt gtc 464  
Gln Thr Thr Lys Glu Glu Ser Gly Ala Val Ala Ala Ala Ser Val  
90 95 100

cct gct cag agt aca gcc aga aca gga cac ttt gtg gac cag cac agg 512  
Pro Ala Gln Ser Thr Ala Arg Thr Gly His Phe Val Asp Gln His Arg  
105 110 115

caa gca ctc att gcc agg gtc aca gaa gtg gac gga gtg ctg gat gct 560  
Gln Ala Leu Ile Ala Arg Val Thr Glu Val Asp Gly Val Leu Asp Ala  
120 125 130

ttg cat ggc agt gtg ctg act gaa gga cag tac cag gca gtt cgt gca 608  
Leu His Gly Ser Val Leu Thr Glu Gly Gln Tyr Gln Ala Val Arg Ala  
135 140 145

gag acc acc agc caa gac aag atg agg aag ctc ttc agc ttt gtt cca 656  
Glu Thr Thr Ser Gln Asp Lys Met Arg Lys Leu Phe Ser Phe Val Pro  
150 155 160 165

tcc tgg aac ctg acc tgc aag gac tcc ctc ctc cag gcc ttg aag gaa 704  
Ser Trp Asn Leu Thr Cys Lys Asp Ser Leu Leu Gln Ala Leu Lys Glu  
170 175 180

ata cat ccc tac ttg gtg atg gac ctg gag cag agc tga ggtatctttt 753  
Ile His Pro Tyr Leu Val Met Asp Leu Glu Gln Ser \*

185 190

ccagctacat tatctagctc ctgactttgt atacacaatt tttgaaaaaa 803

<210> 21  
<211> 193  
<212> PRT  
<213> Mus Musculus

<400> 21



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20      25      30
Arg Glu Gly Tyr Gly Arg Ile Pro Arg Gly Ala Leu Leu Gln Met Asp
35      40      45
Ala Ile Asp Leu Thr Asp Lys Leu Val Ser Tyr Tyr Leu Glu Ser Tyr
50      55      60
Gly Leu Glu Leu Thr Met Thr Val Leu Arg Asp Met Gly Leu Gln Glu
65      70      75      80
Leu Ala Glu Gln Leu Gln Thr Thr Lys Glu Ser Gly Ala Val Ala
85      90      95
Ala Ala Ala Ser Val Pro Ala Gln Ser Thr Ala Arg Thr Gly His Phe
100     105     110
Val Asp Gln His Arg Gln Ala Leu Ile Ala Arg Val Thr Glu Val Asp
115     120     125
Gly Val Leu Asp Ala Leu His Gly Ser Val Leu Thr Glu Gly Gln Tyr
130     135     140
Gln Ala Val Arg Ala Glu Thr Thr Ser Gln Asp Lys Met Arg Lys Leu
145     150     155     160
Phe Ser Phe Val Pro Ser Trp Asn Leu Thr Cys Lys Asp Ser Leu Leu
165     170     175
Gln Ala Leu Lys Glu Ile His Pro Tyr Leu Val Met Asp Leu Glu Gln
180     185     190
Ser

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<210> 22
<211> 605
<212> DNA
<213> Rattus Norvegicus

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<220>
<221> CDS
<222> (2)...(518)

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<400> 22

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1      5      10      15

atc cca cgg ggg gcc ctg ctg cag atg gac ccc ata gac ctc act gat      97
Ile Pro Arg Gly Ala Leu Leu Gln Met Asp Pro Ile Asp Leu Thr Asp
20      25      30

aaa ctc gtc agy tac tat ctg gag ggg tat ggc ttg gag ctc aca atg      145
Lys Leu Val Xaa Tyr Tyr Leu Glu Gly Tyr Gly Leu Glu Leu Thr Met
35      40      45

act gtg ctt aga gac atg ggc ata cag gag ctg gct gag cag ctg caa      193
Thr Val Leu Arg Asp Met Gly Ile Gln Glu Leu Ala Glu Gln Leu Gln
50      55      60

aag att atg gaa gag tct gga gct gtg gct act gca acc agt gtc cct      241
Lys Ile Met Glu Glu Ser Gly Ala Val Ala Thr Ala Thr Ser Val Pro
65      70      75      80

gct cag ggc aca gcc aga aca gaa cat ttt gtg gac caa cac agg caa      289
Ala Gln Gly Thr Ala Arg Thr Glu His Phe Val Asp Gln His Arg Gln
85      90      95

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gca ctc att gcc agg gtc aca gaa gtt gat ggt ttg ctg gat gct ctg 337  
Ala Leu Ile Ala Arg Val Thr Glu Val Asp Gly Leu Leu Asp Ala Leu  
100 105 110

tat ggc aat gtg ctg act gaa gga cag tac cag gca gtt cgt gca gag 385  
Tyr Gly Asn Val Leu Thr Glu Gly Gln Tyr Gln Ala Val Arg Ala Glu  
115 120 125

acc acc aac caa aac aag atg agg aag ctc ttt agc ttt gct cca gcc 433  
Thr Thr Asn Gln Asn Lys Met Arg Lys Leu Phe Ser Phe Ala Pro Ala  
130 135 140

tgg aac ctg acc tgc aag aac ttg ttc ctt gag gcc ttg agg caa aca 481  
Trp Asn Leu Thr Cys Lys Asn Leu Phe Leu Glu Ala Leu Arg Gln Thr  
145 150 155 160

cag ccc tac ttg gtg aca gac ctg gaa cag agc tga g gtatcttttc 528  
Gln Pro Tyr Leu Val Thr Asp Leu Glu Gln Ser \*  
165 170

cagctacaca tctagctcct ggttttgtat acaaaaatttt ctaaaaacaa gtttgtattt 588  
gtgtttttctc gaaaaaa 605

<210> 23  
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<212> PRT  
<213> Rattus Norvegicus

<400> 23  
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Lys Leu Val Xaa Tyr Tyr Leu Glu Gly Tyr Gly Leu Glu Leu Thr Met  
35 40 45  
Thr Val Leu Arg Asp Met Gly Ile Gln Glu Leu Ala Glu Gln Leu Gln  
50 55 60  
Lys Ile Met Glu Glu Ser Gly Ala Val Ala Thr Ala Thr Ser Val Pro  
65 70 75 80  
Ala Gln Gly Thr Ala Arg Thr Glu His Phe Val Asp Gln His Arg Gln  
85 90 95  
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Thr Thr Asn Gln Asn Lys Met Arg Lys Leu Phe Ser Phe Ala Pro Ala  
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tcg gtg ccg ctg cgc gag ggc tac ggg cgc atc ccg cgg ggc gcg ctg      206
Ser Val Pro Leu Arg Glu Gly Tyr Gly Arg Ile Pro Arg Gly Ala Leu
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Leu Ser Met Asp Ala Leu Asp Leu Thr Asp Lys Leu Val Ser Phe Tyr
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Gly Leu Gln Glu Met Ala Gly Gln Leu Gln Ala Ala Thr His Gln Gly
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Leu His Phe Ile Asp Gln His Arg Ala Ala Leu Ile Ala Arg Val Thr
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Asn Val Glu Trp Leu Leu Asp Ala Leu Tyr Gly Lys Val Leu Thr Asp
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Glu Gln Tyr Gln Ala Val Arg Ala Glu Pro Thr Asn Pro Ser Lys Met
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Arg Lys Leu Phe Ser Phe Thr Pro Ala Trp Asn Trp Thr Cys Lys Asp
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 Pro Ala Gly Ile Gln Ala Pro Pro Gln Ser Ala Ala Lys Pro  
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